

**WHAT IS CLAIMED IS:**

1. A method for the sterilizing/cleaning of an object with an aqueous solution of a peroxide, which comprises sterilizing/cleaning the object with an aqueous solution containing a peracetic acid electrolytically synthesized from acetic acid and/or acetate and an oxygen-containing gas as starting materials.

2. The method as claimed in Claim 1, wherein the aqueous solution of a peroxide used for the sterilizing/cleaning of the object is reused for electrolytic synthesis.

3. A sterilizing/cleaning apparatus using a peroxide comprising an electrolytic cell for performing electrolysis while being supplied with acetic acid and/or acetate and an oxygen-containing gas to synthesize an aqueous solution containing peracetic acid and hydrogen peroxide at the cathode, a sterilizing/cleaning chamber for allowing the aqueous solution produced in the electrolytic cell to come in contact with an object, a filter disposed downstream the chamber for filtering the aqueous solution of a peroxide containing peracetic acid and hydrogen peroxide from the sterilizing/cleaning chamber to remove the dead body of living things and a unit for circulating the aqueous solution of peroxide filtered through the filter to the electrolytic cell.

4. The sterilizing/cleaning apparatus as claimed in Claim 3,

wherein a sensor for measuring the concentration of peracetic acid in the aqueous solution of peroxide is provided in the circulation line.

5. A method for the electrolytic synthesis of peracetic acid which comprises electrolytically synthesizing peracetic acid from acetic acid and/or acetate and an oxygen-containing gas as starting materials in the presence of a solid acid catalyst.